DEPARTMENT OF DEFENSE

DEFENSE LOGISTICS AGENCY

Cameron Station,
Alexandria, Virginia 22304-6100

MEDICAL ACQUISITION SHELF—LIFE SYSTEM (MASS) DECISION SUPPORT MODEL SYSTEMS DOCUMENTATION

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MEDICAL ACQUISITION SHELF-LIFE SYSTEM

(MASS)

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Mr. Richard E. Baker, Mr. Rick L. Jernigan
Operations Research and Economic Analysis Office
Headquarters Defense Logistics Agency
Cameron Station, Alexandria, Virginia

DEFENSE LOGISTICS AGENCY
HEADQUARTERS
CAMERON STATION
ALEXANDRIA, VIRGINIA 22304-6100

DLA-LO

FOREWORD

The Medical Acquisition Shelf-Life (MASS) Model is a decision aid to assist procurement analysts in evaluating alternative bids for stocked medical shelf-life items. MASS attempts to identify the best value bid by balancing longer shelf-life against higher purchase price in order to identify the bid with the lowest life cycle costs.

The objectives of this user's guide are to describe the model's features, instruct the user in using MASS, and explain the rationale of the model to vendors.

Christine L. Gallo.

ROGER C. ROY
Assistant Director
Office of Policy and Plans

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I. INTRODUCTION

A. Background

In October 1987, LTG Russo hosted a conference with the Military Service Logistics Chiefs, the Service Surgeons General, and Office of Assistant Secretary of Defense (OASD) (Health Affairs), (Logistics), and (Environment) to discuss the Defense Logistics Agency (DLA) management of medical shelf-life materiel. Two of the action items resulting from this conference concerned the question of how much additional price the Department of Defense should pay to obtain a longer shelf-life period.

One of the action items was assigned to OASD (HA), the other to DLA. The OASD action item required that the MITRE model be evaluated to determine whether it could be used. The MITRE model was developed in the early eighties and was designed to address the additional price for longer shelf-life issue. The DLA action item required that an entirely new model be explored. Both OASD and DLA evaluated the MITRE model and concluded that the MITRE model had serious limitations and could not be used. As a result the Medical Acquisition Shelf-Life System (MASS) model was developed by the DLA Operations Research and Economic Analysis Management Support Office (DORO).

B. Problem. The Medical Acquisition Shelf-Life System (MASS) model is a decision aid to assist procurement analysts in evaluating alternative bids for stocked medical shelf-life items. The idea behind this model is not new. The model attempts to identify the best value bid by balancing longer shelf-life against higher purchase price. Life cycle costs are calculated for each bid by considering the purchase price, administrative buy, transportation, handling, storage, disposal, and replacement costs incurred for each bid.

C. Objectives. The objectives of this manual are to describe the data update procedures, the dBASE files, and the programs which produce the MASS files.

D. Scope. This model is limited to stocked medical shelf-life items, i.e. Replenishment Demand (Item Category Code 1 and P items).

II. CONCLUSIONS

A. MASS is a decision aid which can save money by considering the life cycle costs rather than just accepting the low bid.

B. MASS can save time by automating a difficult bid evaluation trade off decision.

C. Since MASS uses historical data to calculate costs, the data base must be updated periodically.

III. RECOMMENDATIONS

A. DORO recommends updating the MASS data annually.

B. Currently vendors indicate the shelf life of their products only if they do not meet the minimum shelf-life requirement. The Defense Personnel Support Center should modify their bid process in order to obtain shelf-life information for all medical shelf-life bids.

C. Procurement analysts should not be legally required to accept the MASS model recommendations. Analysts must be free to exercise their judgment.

IV. BENEFITS. The MASS model calculates cost avoidances by comparing the life cycle costs of each bid to the life cycle cost of the bid that normally would have been selected if the MASS model had not been used. Based on our initial testing of the model on actual evaluations, the average avoidance per evaluation was $114,583. The Technical Services Branch, Technical Operations Division, Medical Directorate, Defense Personnel Support Center (DPSC-RSTH-21) estimated that the model would be used for 120 evaluations per year. If the recommendations of the MASS model are implemented, the Department of Defense would realize an estimated cost avoidance of up to $13.75 million per year or a total net present value of $137.5 million using the standard 10 percent discount factor.

V. IMPLEMENTATION. The MASS model has been implemented at the Defense Personnel Support Center to evaluate alternative bids for stocked medical shelf-life items. Prior to finalizing award of contracts, DPSC-RSTH-21 uses the MASS model to evaluate bids and make their recommendations to procurement. DPSC-RSTH-21 agreed to update the data according to the procedures specified in Section VIII.

VI. MODEL FEATURES

MASS allows the user to evaluate virtually an unlimited number of bids for an NSN at the same time. Additionally, it is easier to use because it provides NSN characteristics that are derived from historical data. In order to make running the model as easy as possible, the model provides default suggestions based on historical data for necessary input values. The model will display these default values and will give the user an opportunity to change them.

Also, the model will save the original bid information to facilitate investigating "what if" questions. For example, if the users want to investigate the effects on which bid would be accepted by changing the transportation and handling costs, the model will save the bid information for them so that they can rerun the model changing the transportation and handling costs as many times as they want. The user can then see what the affects of these changes are on the life cycle costs and ranking of the bids. Saving the users' bid information relieves them of reentering this information each time they want to change the defaults.

The model also gives the users the option to save their output to a disk file for use by other programs or packages such as dBASE, LOTUS, or ENABLE. If the MASS results are moved to these packages, reports can be customized, combined with other data, or graphed. This interface ability provides great flexibility. However, some familiarity with these packages is required.

VII. MASS FILES. MASS requires a collection of program, data base, index, configuration, and batch files to run properly. These files must be loaded on a hard disk to run MASS. If they are not loaded, see the Medical Acquisition Shelf-Life System (MASS) Decision Support Model User's Guide for loading instructions. Table 1 provides a list of all MASS files. Each file is explained in more detail in the following sections.

Table 1

MASS FILES

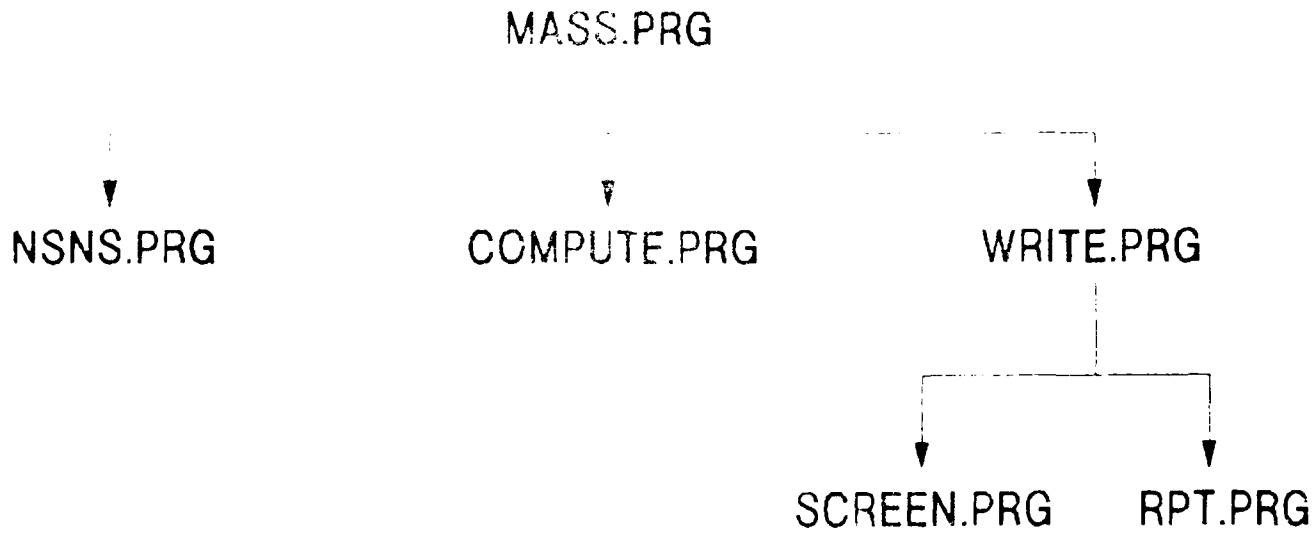
Program Files	MASS.PRG COMPUTE.PRG NSNS.PRG WRITE.PRG SCREEN.PRG RPT.PRG UPDATE.PRG
Data Base Files	NSN.DBF DEFAULTS.DBF RPT.DBF UCOST.DBF MASS123.DBF
Index File	NSN.NDX
Configuration Files	CONFIG.DB CONFIG.DB2
Batch Files	M.BAT CRASH.BAT
Data Base Processing Files	COR BAKER ICI (P8016)

modules, prints the input data, and controls the writing of the interface files. SCREEN.PRG displays the MASS results on the monitor screen. RPT.PRG prints the Medical Acquisition Shelf Life System (MASS) Report.

UPDATE.PRG is a separate program which can run independently from the other MASS program modules. This program updates the National Stock Number (NSN) data base. It asks the users if they want to erase the current NSN data base. After receiving confirmation, this program erases the NSN dBASE file, then copies the new NSN text file into a dBASE format. Finally, this program indexes the NSN file to speed execution.

Figure 1

MASS PROGRAMS



Updating the MASS code is the responsibility of the Defense Logistics Agency, Operations Research and Economic Analysis Management Support Office (DORO). These program files should not be modified without the permission of the DORO office. Read only protection has been placed on these files. For your convenience, the dBASE code for these program files is listed in Appendices A through G.

B. Data Base Files. NSN.DBF, DEFAULTS.DBF, RPT.DBF, UCOST.DBF, and MASS123.DBF are the MASS data base files. NSN.DBF carries item characteristics and demand pattern data for each National Stock Number. DEFAULTS.DBF has only one record. It contains default values for NSNs not found in the NSN data, expandability data, system-wide costs, and

parameters for equations. RPT.DBF and UCOST.DBF are work files. They store bid information for the MASS screens and reports. MASS123.DBF is an interface file. Results can be stored in MASS123.DBF and be interfaced with other packages such as dBASE, LOTUS, or ENABLE.

C. Index File. NSN.NDX is the only indexed file in MASS. The NSN file was indexed to speed the execution of NSN searches. The NSN.NDX file corresponds to the NSN.DBF file. If records are added or deleted from the NSN.DBF file, then a new NSN.NDX file must be made by typing:

<INDEX ON NSN TO NSN>

D. Configuration Files. CONFIG.DB and CONFIG.DB2 are dBASE configuration files. They are automatically accessed when dBASE is executed. The configuration files establish the environment for dBASE.

E. Batch Files. M.BAT and CRASH.BAT are batch files. M.BAT removes read only protection from the program files, NSN.DBF and DEFAULTS.DBF, so that MASS can use them. M.BAT also renames the dBASE configuration files so that dBASE is properly configured for MASS. M.BAT then calls dBASE and executes the MASS programs. After MASS is finished, the M.BAT program returns the dBASE configuration to its normal setting, places read only protection back on the MASS files, and returns the computer to its original screen. If MASS is interrupted by a power failure, the M.BAT program will not properly change the configuration or replace the read only protection on the MASS files. CRASH.BAT restores the computer to its proper settings in the event of a power outage. The batch files are listed in Appendices H and I.

F. Data Base Processing Files. GOR.BAKER.JCL (P8016) and GOR.BAKER.JCL (P8016B) are mainframe program files which create the NSN data base. These files reside on the DORO01 disk pack of the DORAN computer. In the event that the disk pack files are accidentally erased, these files are backed up on tape number 007578. File # 1 on the tape is GOR.BAKER.JCL8016 and file # 2 is GOR.BAKER.JCL8016B. Copies of these programs are listed in Appendices J and K.

VIII. UPDATE PROCEDURES

A. Update Data Annually. Since MASS calculates life cycle costs based on historical data, this data must be periodically updated. We recommend that the data be updated annually.

B. DRMS Data Call. The first step in the data update process is to issue data calls to the Defense Reutilization Marketing Service (DRMS) and DORO. Figure 2 is an example of a DRMS data call letter. We suggest that you call DRMS and DORO before issuing the data calls. Table 2 lists telephone numbers for contacts as of October 1988.

SUBJECT: Request for Disposal Data

TO: Defense Reutilization Management Service
Federal Center
ATTN: DRMS-OD
Debbie Helton
North Washington Street
Battle Creek, Michigan 49017-3096

1. Reference: Telephone conversation between Ms. Debbie Helton, DRMS-OD, and Name, OFFICE-SYMBOL, Date, subject as above.

2. We request that you send us a 9 track 6,250 density EBCDIC IBM standard label tape. The tape should contain one year's worth of world-wide disposal receipt transactions (document identifier code 'XR1' and 'XR3' transactions).

3. Please mail the tapes to:

Address
ATTN: Name
City, State Zip Code

4. The point of contact for this request is Name, OFFICE-SYMBOL, Autovon phone number.

SIGNATURE BLOCK

Table 2

TELEPHONE NUMBERS

For Help With:	Contact Person	Autovon Number	Office
Shelf-Life Policies	Mike Pipan	284-6193	DLA-OSC
Extendibility/Expandability Statistics	LTC Horace Knigh	343-7387	DMSB-11
Disposal Costs	Joann Stock	932-5902	DRMS-HP
Disposal Data Call Tapes	Debbie Helton	932-5966	DRMS-OD
MASS Systems Administration	Pat Humphrey	444-2129	DPSC-RSTH-21
MASS Programs and Data	Rick Baker	695-4918	DLA-DORO

C. Data Base Processing Programs. After you receive the tapes from DORO and DRMS, run the data processing program listed in Appendix K. This program may need to be adapted to run on your mainframe. This program matches the data on the two tapes and creates a data file called GOR.BAKER.P8016DB. This NSN data file should be downloaded to a diskette file called NSN.TXT.

D. UPDATE.PRG. This program copies the NSN.TXT file into a dBASE format. Figure 3 displays the files and programs for the NSN data processing. **WARNING**, UPDATE.PRG erases the NSN.DBF data prior to writing the new NSN data. Please follow these steps carefully to prevent data loss.

1. Enter dBASE
2. At the dot prompt, make a backup copy of NSN.DBF by typing:

   <COPY FILE NSN.DBF TO NSN2.DBF>

3. When the dot prompt returns, execute UPDATE.PRG by typing:

   <DO UPDATE>

4. Confirm that you want to zap NSN.DBF by typing: **<Y>**
5. Confirm that you want to overwrite NSN.NDX by typing: **<Y>**
6. Exit dBASE by typing: **<QUIT>**

E. Updating DEFAULTS.DBF

Since DEFAULTS.DBF has only one record, the easiest way to update this file is to edit it manually. Figure 4 lists the variables contained in DEFAULTS.DBF. The first ten variables listed in Figure 4 are missing value defaults. MASS uses these values when an NSN cannot be found on the NSN.DBF file. These default values are based on system average statistics which are printed by the GOR.BAKER.JCL (P8016) job. BADF, BPCM, BSHM, BSLM, and CONSTANT are updated using statistics printed by the GOR.BAKER.JCL (P8016B) job. Please save the output listing of these jobs until DEFAULTS.DBF is updated.

Figure 4

LISTING OF DEFAULTS.DBF

Variable Name	Value	Description
MSHM	31	Minimum Shelf Life
HAZ		Hazardous Code
UWEIGHT	16.04	Unit Weight
SLM	1.8	Safety Level Months
ADF	231	Annual Demand Frequency
PCM	7	Procurement Cycle Months
RPWR	0.0130	Rotatable Prepositioned War Reserve Probability
NPWR	0.0022	Nonrotatable Prepositioned War Reserve Probability
TRANH	0.1730	Transportation and Handling Cost
INAME	MISSING NSN VALUES	Item Name
PEXP	0.77	Probability of Expansion
EXPR	0.28	Expansion Rate
BUYCOST	250.00	Administrative Buy Cost
HDISP	8.3300	Hazardous Disposal Cost Per Pound
NDISP	8.1800	Nonhazardous Disposal Cost Per Pound
BADF	-0.00006151	Beta for Annual Demand Frequency
BPCM	0.00208200	Beta for Procurement Cycle Months
BSHM	-0.00114500	Beta for Shelf Life Months
BSLM	0.00131400	Beta for Safety Level Months
CONSTANT	0.09958500	Constant for Disposal Equation
HOLDING	0.11	Holding Cost per Inventory Dollar

PEXP and EXPR figures can be obtained from the Defense Medical Standardization Board (see Table 2 for telephone numbers). PEXP is the probability that the shelf-life can be expanded or extended by vendor. EXPR is the average proportion of increase in shelf-life if the stock is

expanded or extended. For example, if PEXP = .77 and EXPR = .28, this means that 77 percent of the items identified for extention are successfully extended. Of that 77 percent extended, their shelf-life, on the average, is increased by 28 percent.

Hazardous disposal cost per pound (HDISP) and nonhazardous disposal costs per pound (NDISP) are based on figures obtained from DRMS (see Table 2 for points of contact). The hazardous disposal administrative costs per pound (H) and nonhazardous administrative costs per pound (N) for Federal Supply Class 6505 are required. You will also need to know the average unit weight (W) and average unit price (P) for the medical data base. These figures can be obtained from the statistics printed by the GOR.BAKER.JCL (P8016) job. Once these are obtained, calculate the hazardous and nonhazardous costs with the following formulas:

HDISP = H + P/W

NDISP = N + P/W

The HAZ, INAME, BUYCOST, and HOLDING values in DEFAULTS.DBF are not likely to change. INAME is a default title used for the Item Name on the Medical Acquisition Shelf-Life System (MASS) Report when the NSN cannot be found on the NSN.DBF file. BUYCOST is the administrative buy cost specified by the Federal Acquisition Regulations. This figure does not change unless the law changes. HOLDING is the estimated holding cost per dollar of inventory. It includes 10 percent for the time value of money plus 1 percent for physical storage. Since HOLDING is a cost per dollar of inventory, this figure does not need to be updated for inflation. Data indicates that this value is relatively stable, but if you wish to change this figure, contact the Depot Operations Office at the Defense Logistics Agency Headquarters (DLA-OW) (see Table 2).

Once the new values are determined, the DEFAULTS.DBF can be easily edited by the following steps:

1. Change the directory to the dBASE directory by typing a back slash and the dBASE directory name for your computer. For most systems the dBASE directory is called "DBASE." If so, type: **\DBASE.**

2. Remove read only protection by typing:

   <ATTRIB-R DEFAULTS.DBF>

3. Enter dBASE by typing: **<DBASE>**

4. At the dot prompt, type: **<USE DEFAULTS>**

5. Edit the file by typing: **<EDIT>**

6. The file can be changed by overwriting the highlighted values.

7. When finished, hit the <W> key while holding down the <CTRL> key to save the file.

8. Exit dBASE by typing: <QUIT>

F. Adding or Deleting NSN Records. NSN.DBF can be edited following procedures similiar to the 8 steps listed above, except in step 4 you would type: USE NSN. However, when you add or delete records from the NSN data base it is necessary to reindex the file for the MASS searches to work properly.

APPENDIX A

MASS.PRG Code

```
set confirm on
set talk off
clear
? ' Welcome to the Medical Acquisition Shelf-life System (MASS) '
? ''
? '                  Defense Logistics Agency '
? '                           DORO'
? ''
? '                        Richmond, Virginia'
? ''
? ''
? ''
? ''
? ''
? ''
? ''
? ''
? '                Program Creation Date = October 1988 '
lines = 0
do while lines < 150
  lines = lines + 1
enddo
clear
use rpt
SET safety off
zap
USE DEFAULTS
store 0 to ubuyqty
STORE '                ' TO UNSN
STORE HAZ TO UHAZ
STORE INAME TO UINAME
UMSHM = mshm
if umshm < 3
  umshm = 3
endif
STORE UWEIGHT TO UUWEIGHT
store slm to uslm
store adf to uadf
store pcm to upcm
STORE RPWR TO URPWR
STORE NPWR TO UNPWR
STORE TRANH TO UTRANH
STORE .T. TO continue
set bell oFF
set talk off
? 'MASS evaluates stocked replenishment demand'
? 'Medical shelf-life item life cycle costs for any number of bids.'
? ' '
do while continue
  do nsns
  use rpt
  go top
  recnum = 0
  store '?' to ubid
  store .f. to unormal
  store .f. to fnormal
  do while ubid # '              '
    clear
    append blank
    recnum = recnum + 1
    go recnum
    ? 'Enter a blank for BID ID when finished entering all bids.'
    ?
    ? '                                                    DOES  ADDITIONAL'
    ? '                                  SHELF            VENDOR    PER UNIT'
    ? '                                   LIFE            EXTEND   COSTS NOT'
```

```
    ? '                              VALID                SHELF    INCLUDED'
    ? '                  OFFERED     RANGE       BUY      LIFE?  IN OFFERED'
    ? 'BID ID         UNIT PRICE   (3-120)       QTY   (T OR F)   UNIT PRICE'
    store bid to ubid
    store price to uprice
    store shm to ushm
    store extend to uextend
    store acost to uacost
    @ 10, 0 get ubid
    read
    if ubid # '            '
      @ 10, 14 get uprice picture '#######.##'
      @ 10, col()+6 get ushm picture '@z ###' range 3,120
      @ 10, col()+2 get ubuyqty picture '@z #######' range 1,9999999
      @ 10, col()+9 get uextend picture 'L'
      @ 10, col()+2 get uacost picture '#######.##'
      if .not. unormal .and. .not. fnormal
        ?
        ? 'This is the bid that I normally would have taken (T or F)? '
        @ row(), col() get unormal picture 'L'
        read
        fnormal = unormal
        replace normal with unormal
        unormal = .f.
      else
        read
        replace normal with .f.
      endif
      replace bid with ubid
      replace price with uprice
      replace shm with ushm
      replace buyqty with ubuyqty
      replace extend with uextend
      replace acost with uacost
      do compute
      skip 1
    endif
  enddo
  do while .not. eof()
    delete
    skip 1
  enddo
  do write
  ? 'I wish to run MASS again (T or F)? '
  store .F. to continue
  @row(), col() get continue picture 'L'
  read
  clear
enddo
clear
@ 12,23 say 'Thank you for using MASS.'
lines = 0
do while lines < 90
  lines = lines + 1
enddo
clear
quit
```

APPENDIX B

COMPUTE.PRG Code

```
use defaults
pdisp=badf*uadf+bpcm*upcm+bshm*ushm+bslm*uslm+constant
if pdisp < 0
  pdisp = 0
endif
if pdisp - unpwr > 1
  pdisp = 1 - unpwr
endif
if uextend
  eshm=ushm*pexp*expr+ushm
else
  eshm=ushm
endif
ushm=eshm-6.
if ushm < 3
  ushm = 3.0
endif
rshm=eshm-7.
if rshm < 3
  rshm = 3.0
endif
price=(uacost+uprice)*ubuyqty
thcost=Utranh*uuweight*ubuyqty
if uhaz = 'nl' .or. uhaz = '  '
  dispc=ndisp*uuweight*ubuyqty+thcost+price*holding*eshm/12
  dispnr=ndisp*uuweight*ubuyqty+thcost
else
  dispc=hdisp*uuweight*ubuyqt+thcost+price*holding*eshm/12
  dispnr=hdisp*uuweight*ubuyqty+thcost
endif
cum=0
if npwr > 0
  I=0
  do while i <= 120
    do case
      case i < 12
        disc=1.000
      case i < 24
        disc=.954
      case i < 36
        disc=.867
      case i < 48
        disc=.788
      case i < 60
        disc=.717
      case i < 72
        disc=.651
      case i < 84
        disc=.592
      case i < 96
        disc=.538
      case i < 108
        disc=.489
      case i < 120
        disc=.445
      otherwise
        disc=.405
    endcase
    cum=disc+cum
    i=i+ushm
  enddo
  term=(i-120)/ushm*.405
  cum=cum-term
endif
do case
  case eshm < 12
```

```
      pdisc=1.000
      [illegible]
      [illegible]
      [illegible]
      [illegible]
      [illegible]
    case eshm < 48
      edisc=.788
    case eshm < 60
      edisc=.717
    case eshm < 72
      edisc=.651
    case eshm < 84
      edisc=.592
    case eshm < 96
      edisc=.538
    case eshm < 108
      edisc=.489
    case eshm < 120
      edisc=.445
    otherwise
      edisc=.405
  endcase
  do case
    case rshm < 12
      rdisc=1.000
    case rshm < 24
      rdisc=.954
    case rshm < 36
      rdisc=.867
    case rshm < 48
      rdisc=.788
    case rshm < 60
      rdisc=.717
    case rshm < 72
      rdisc=.651
    case rshm < 84
      rdisc=.592
    case rshm < 96
      rdisc=.538
    case rshm < 108
      rdisc=.489
    case rshm < 120
      rdisc=.445
    otherwise
      rdisc=.405
  endcase
  phold=(1-pdisp)*price*holding/2
  nrhold=unpwr*price*holding*6.447
  pcost=(1-Unpwr)*(price+thcost+buycost+phold+pdisp*dispc*edisc)
  rpwrcost=urpwr*thcost*rdisc
  npwrcost=unpwr*(price+thcost+buycost+dispnr)*cum+nrhold
  lifecost=pcost+rpwrcost+npwrcost
  use rpt
  go recnum
  replace ucost with lifecost/ubuyqty
  replace lcost with lifecost
  return
```

APPENDIX C

NSNS.PRG Code

```
store .T. to repeat
do while repeat
  ? 'Please enter the national stock number (NSN) for the bids'
  ? 'that you wish to evaluate '
  ? ' '
  @ 7, 0 say 'nsn = ' GET UNSN PICTURE '9999999999999'
  READ
  use nsn index nsn
  seek unsn
  CLEAR
  if eof()
    ? 'NSN not found.  You may accept or modify the system '
    ? 'defaults for this NSN or enter a new NSN '
    ? 'System defaults are based on data base averages.'
    USE DEFAULTS
    store HAZ TO UHAZ
    STORE INAME TO UINAME
    UMSHM = mshm - 4
    if umshm < 3
       umshm = 3
    endif
    STORE UWEIGHT TO UUWEIGHT
    store slm to uslm
    store adf to uadf
    store pcm to upcm
    STORE RPWR TO URPWR
    STORE NPWR TO UNPWR
    STORE TRANH TO UTRANH
   ELSE
    ? 'The data base information for this NSN may be accepted by'
    ? 'hitting enter or can be temporarily modified for this analysis.'
    ? 'Permenant data base updates may be made by browsing or '
    ? 'editing NSN.DBF.'
    STORE HAZ TO UHAZ
    STORE INAME TO UINAME
    UMSHM = mshm - 4
    if umshm < 3
      umshm = 3
    endif
    STORE UWEIGHT TO UUWEIGHT
    store slm to uslm
    store adf to uadf
    store pcm to upcm
    STORE RPWR TO URPWR
    STORE NPWR TO UNPWR
    STORE TRANH TO UTRANH
   ENDIF
   wait
   clear
   ? 'I wish to accept all these NSN characteristics (T or F)? '
   store .T. to accept
   @row(), col() get accept picture 'L'
   ?
   ? 'NSN ='
   ?? unsn
   ?
   ? 'Hazardous or high disposal cost item code (blank means nonhaz.) = '
   @row(), col() say Uhaz picture '!'
   ?
   ? 'Item name =
   @row(), col() say uiname
   ?
   ? 'Min shelf life required for this NSN (valid range 1-120) ='
   @row(), col() say UMSHM picture '@z ###'
   ?
   ? 'Unit weight
```

```
[illegible] col() say Uuweight picture '@z ####.##'
?
[illegible]
@row() col() say Uslm picture '##.#'
?
? 'Annual demand frequency - '
@row(), col() say Uadf picture '#######'
?
? 'Procurement cycle months (valid range 3 to 36) - '
@row(), col() say Upcm picture '@z ###'
?
? 'Probability of rotatable pwr - '
@row(), col() say urpwr picture '#.####'
?
? 'Probability of nonrotatable pwr - '
@row(), col() say unpwr picture '#.####'
?
? 'Transportation and handling $ per pound - '
@row(), col() say utranh picture '@z ###.####'
read
if accept
  return
endif
clear
? 'NSN -'
?? unsn
?
? 'Hazardous or high disposal cost item code (blank means nonhaz.) - '
@row(), col() get Uhaz picture '!!'
?
? 'Item name - '
@row(), col() get uiname
?
? 'Min shelf-life required for this NSN (valid range 3-120) -'
@row(), col() get UMSHM picture '###' range 3,120
?
? 'Unit weight - '
@row(), col() get Uuweight picture '@z ####.##' range .01,9999.99
?
? 'Safety level months - '
@row(), col() get Uslm picture '##.#'
?
? 'Annual demand frequency - '
@row(), col() get Uadf picture '#######'
?
? 'Procurement cycle months (valid range 3 to 36) - '
@row(), col() get Upcm picture '@z ###' range 3,36
?
? 'Probability of rotatable pwr - '
@row(), col() get urpwr picture '#.####'
?
? 'Probability of nonrotatable pwr - '
@row(), col() get unpwr picture '#.####'
?
? 'Transportation and handling $ per pound - '
@row(), col() get utranh picture '@z ###.####' range .0001,999.9999
?
? 'I wish to stop and enter a new NSN (T or F)? '
store .F. to repeat
@row(), col() get repeat picture 'L'
read
clear
enddo
return
```

APPENDIX D

WRITE.PRG Code

```
use rpt
go top
delete for bid = '            '
pack
sort to ucost on ucost
use ucost
go top
minprice=9999999.99
nlcost = 0
nbuyqty = 1
flag = .f.
do while .not. eof() .and. .not. flag
  if shm >= umshm .and. price < minprice
    minprice = price
    nlcost = lcost
    nbuyqty = buyqty
  endif
  if normal
    flag = .t.
    minprice = price
    nlcost = lcost
    nbuyqty = buyqty
  endif
  skip 1
enddo
go top
do while .not. eof()
  if nlcost = 0
    avoid = 0
  else
    avoid=buyqty*(nlcost/nbuyqty-lcost/buyqty)
  endif
  replace avoidance with avoid
  replace nsnout with unsn
  replace mshmout with umshm
  replace acceptbid with ' '
  replace haz with uhaz
  replace uweight with uuweight
  replace slm with uslm
  replace adf with uadf
  replace pcm with upcm
  replace rpwr with urpwr
  replace npwr with unpwr
  replace tranh with utranh
  skip 1
enddo
do screen
do rpt
?
set print off
set console on
clear
? 'I wish to print the data used in the analysis to compute'
? 'the life cycle costs?'
? 'Warning: This may print several pages of output.'
? 'I wish to print the input data (T or F)?'
store .T. to continue
@row(), col() get continue picture 'L'
read
if continue
  set print on
  set console off
  ? 'NSN Characteristics Used to Compute Life Cycle Costs'
  ?
  ? 'Date (mm/dd/yy) = '
  ?? date()
```

```
?? '   Time (hh:mm:ss) = '
?? time()
?
? 'Hazardous Storage Compatability Code = '
?? uhaz
? 'unit weight = '
?? uuweight
? 'safety level months = '
?? uslm
? 'annual demand frequency = '
?? uadf
? 'procurement cycle months = '
?? upcm
? 'rotatable PWR probability = '
?? urpwr
? 'nonrotable PWR disposal probability = '
?? unpwr
? 'transportation and handling cost per pound = '
?? utranh
?
? 'Bid Extention and Additional Costs'
list off bid, extend, acost
use defaults
?
? 'System Default Values'
?
? 'Minimum Shelf-life Requirement = '
?? mshm
? 'Hazardous Storage Compatability Code = '
?? haz
? 'Unit Weight = '
?? uweight
? 'Safety Level Months = '
?? slm
? 'Annual Demand Frequency = '
?? adf
? 'Procurement Cycle Months = '
?? pcm
? 'Rotatable PWR Probability = '
?? rpwr
? 'Nonrotable PWR Disposal Probability = '
?? npwr
? 'Transportation and Handling Cost Per Pound = '
?? tranh
? 'Item Name = '
?? iname
? 'Probability of Shelf-life Extention or Expansion = '
?? pexp
? 'Percent Shelf-life Extention or Expansion = '
?? expr
? 'Administrative Cost of a Buy = '
?? buycost
? 'Hazardous Item Disposal Cost Per Pound = '
?? hdisp
? 'Nonhazardous Item Disposal Cost Per Pound = '
?? ndisp
? 'Beta Value for Annual Demand Frequency = '
?? badf
? 'Beta Value for Procurement Cycle Months = '
?? bpcm
? 'Beta Value for Shelf-life Months = '
?? bshm
? 'Beta Value for Safety Level Months = '
?? bslm
? 'Regression Constant = '
?? constant
```

```
  ? 'Annual holding cost per dollar of inventory = '
  ?? holding
  ?
endif
set console on
set print off
clear
? 'The results of this MASS analysis are stored in file MASS123.DBF.'
? 'This file has been formatted for LOTUS 123.'
? 'If you want to format this data for ENABLE, we suggest that you'
? 'use the translate option in LOTUS version 2 to write a .WKS file.'
? 'This .WKS file can then be read by ENABLE.  We suggest this method'
? 'because some versions of ENABLE are not directly compatable with'
? 'dBASE III.  See the Use manual for further details.'
?
? 'I want to erase the previous MASS123.DBF file (T or F)?'
store .F. to continue
@row(), col() get continue picture 'L'
read
if continue
  store .N. to continue
  ? 'I am sure that I want to erase MASS123.DBF (T or F)?'
  @row(), col() get continue picture 'L'
  read
endif
if continue
  use mass123
  zap
  use ucost
endif
store .T. to continue
? 'I want to append the current results to file MASS123.DBF (T or F)?'
@row(), col() get continue picture 'L'
read
if continue
  use mass123
  append from delimited from ucost
  endif
clear
return
```

APPENDIX E

SCREEN.PRG Code

```
go top
set print off
set console on
do while .not. eof()
  clear
  ? '          Medical Acquisition Shelf-life System (MASS) Report'
  ?
  ? 'NSN - '
  ?? unsn
  ? 'Item Name - '
  ?? uiname
  ? 'Current Shelf-life Month Requirement - '
  ?? umshm
  ? 'Date (mm/dd/yy)   - '
  ?? date()
   ?? '         Time (hh:mm:ss) - '
  ?? time()
  ?
  ? '                                    Ten Year                Te'
  ?? 'n Year            '
  ? '                  Vendor  Shelf  Discounted              Disc'
  ?? 'ounted      Ten Year'
  ? '                    Unit   Life   Unit Life       Buy        '
  ?? '  Life           Cost'
  ? 'Bid Id             Price  Month  Cycle Cost  Quantity   Cycle'
  ?? ' Cost      Avoidance'
  ?
  lines - 0
  do while lines < 11
    lines - lines + 1
    ? bid
    ?? ' '
    ?? price
    ?? '    '
    ?? shm
    ?? ' '
    ?? ucost
    ?? '    '
    ?? buyqty
    ?? ' '
    ?? lcost
    ?? ' '
    ?? avoidance
    skip 1
    if eof()
      lines - 52
     endif
   enddo
   wait
 enddo
 clear
 return
```

APPENDIX F

RPT.PRG Code

```
clear
store .T. to continue
? 'I want to print this report (T or F)?'
@row(), col() get continue picture 'L'
read
if .not. continue
  return
endif
go top
set print on
set console off
do while .not. eof()
  ?
  ? '          Medical Acquisition Shelf-life System (MASS) Report'
  ?
  ? 'NSN - '
  ?? unsn
  ? 'Item Name - '
  ?? uiname
  ? 'Current Shelf-life Month Requirement - '
  ?? umshm
  ? 'Date (mm/dd/yy)   - '
  ?? date()
   ?? '          Time (hh:mm:ss) - '
  ?? time()
  ?
  ? '                                    Ten Year                Te'
  ?? 'n Year            '
  ? '                  Vendor  Shelf  Discounted              Disc'
  ?? 'ounted      Ten Year'
  ? '                    Unit   Life   Unit Life        Buy       '
  ?? '  Life          Cost'
  ? 'Bid Id             Price  Month  Cycle Cost   Quantity   Cycle'
  ?? ' Cost      Avoidance'
  ?
  lines - 0
  do while lines < 51
    lines - lines + 1
    ? bid
    ?? ' '
    ?? price
    ?? '    '
    ?? shm
    ?? ' '
    ?? ucost
    ?? '    '
    ?? buyqty
    ?? '  '
    ?? lcost
    ?? '  '
    ?? avoidance
    skip 1
    if eof()
      lines - 52
    endif
  enddo
  eject
enddo
?
return
```

APPENDIX G

UPDATE.PRG Code

```
USE NSN
ZAP
APPEND FROM NSN.TXT SDF
INDEX ON NSN TO NSN
USE
```

APPENDIX H

M.BAT Code

```
ECHO OFF
CD\DBASE
NOKEY
attrib -r nsn.dbf
attrib -r compute.prg
attrib -r mass.prg
attrib -r rpt.prg
attrib -r write.prg
attrib -r screen.prg
attrib -r defaults.dbf
rename config.db config2.db
rename config.db2 config.db
DBASE
rename config.db config.db2
rename config2.db config.db
attrib +r nsn.dbf
attrib +r compute.prg
attrib +r mass.prg
attrib +r rpt.prg
attrib +r write.prg
attrib +r screen.prg
attrib +r defaults.dbf
cd\
autoexec
```

APPENDIX I

CRASH.BAT Code

```
ECHO OFF
CD\DBASE
rename config.db config.db2
rename config2.db config.db
attrib +r nsn.dbf
attrib +r compute.prg
attrib +r mass.prg
attrib +r rpt.prg
attrib +r write.prg
attrib +r screen.prg
attrib +r defaults.dbf
cd\
autoexec
```

APPENDIX I

GOR.BAKER.JCL(P8016) Code

```
//GORA001D JOB (6001,GOR),'BAKER',MSGCLASS=V,CLASS=J,TIME=1440          00010000
//STEP1   EXEC PGM=BATCH204,REGION=3000K                                00030002
//STEPLIB   DD DSN=M204.R90.CRAMLIB,DISP=SHR                            00040002
//          DD DSN=M204.R90.LOAD,DISP=SHR                               00050002
//CCASTAT   DD DSN=M204.CCASTAT,DISP=SHR                                00060002
//NSN       DD DSN=GORD.NSN884,DISP=SHR                                 00070003
//DMRO1     DD DSN=GORD.DMRO881,DISP=SHR                                00080002
//DMRO1A    DD DSN=GORD.DMRO881A,DISP=SHR                               00090002
//DMRO2     DD DSN=GORD.DMRO882,DISP=SHR                                00100002
//DMRO2A    DD DSN=GORD.DMRO882A,DISP=SHR                               00110002
//DMRO3     DD DSN=GORD.DMRO883,DISP=SHR                                00120003
//DMRO3A    DD DSN=GORD.DMRO883A,DISP=SHR                               00130003
//DMRO4     DD DSN=GORD.DMRO884,DISP=SHR                                00140003
//DMRO4A    DD DSN=GORD.DMRO884A,DISP=SHR                               00150003
//CCAAUDIT  DD SYSOUT=*                                                 00160002
//CCAPRINT  DD SYSOUT=*                                                 00170002
//CCATEMP   DD DSN=&&TEMP,DISP=(NEW,DELETE,DELETE),UNIT=WORKD,          00180002
//             SPACE=(TRK,200)                                          00190002
//SYSPRINT  DD SYSOUT=*                                                 00200002
//OUTDATAN  DD DSN=GOR.BAKER.P8016MRO,DISP=(NEW,PASS,DELETE),           00210002
//             UNIT=TAPE,DCB=(RECFM=FB,LRECL=208,BLKSIZE=23296),        00220002
//             LABEL=RETPD=180,VOL=(,,,9)                               00230003
//SYSOUT    DD SYSOUT=*                                                 00240002
//CCAIN     DD *                                                        00250002
NDIR=10,NFILES=10,LVTBL=2000,LNTBL=200,LQTBL=800,LRETBL=4000,          X00260002
LSTBL=15528,MDKRD=5000000,MDKWR=5000000,MCNCT=250000,MUDD=2000000,     X00270002
PAGESZ=6184,LFSCB=5000,UDDCCC=133,OUTMRL=133,MOUT=2000000,LFTBL=109432  00280002
LOGIN GOR6058                                                           00290002
HUNDLEY                                                                 00300002
OPEN NSN                                                                00310002
                                                                        00320002
OPEN DMRO1                                                              00330002
                                                                        00340002
OPEN DMRO2                                                              00350002
                                                                        00360002
OPEN DMRO3                                                              00370002
                                                                        00380002
OPEN DMRO4                                                              00390002
                                                                        00400002
BEGIN                                                                   00410002
IMAGE NSNOUT                                                            00420002
      OUT.NSN IS STRING LEN 13                                          00430002
      OUT.HAZ IS STRING LEN 2                                           00440002
      OUT.INAME IS STRING LEN 19                                        00450002
      OUT.LDISP IS STRING LEN 5 PAD '0' JUSTIFY RIGHT                   00460002
      OUT.SHLM IS STRING LEN 2 PAD '0' JUSTIFY RIGHT                    00470002
      OUT.SPRQC IS STRING LEN 1                                         00480002
      OUT.UCUBE IS STRING LEN 6 PAD '0' JUSTIFY RIGHT                   00490002
      OUT.UWEIGHT IS STRING LEN 6 PAD '0' JUSTIFY RIGHT                 00500002
      OUT.UPRICE IS STRING LEN 9 PAD '0' JUSTIFY RIGHT                  00510002
      OUT.SLM IS STRING LEN 3 PAD '0' JUSTIFY RIGHT                     00520002
      OUT.BOQ IS STRING LEN 9 PAD '0' JUSTIFY RIGHT                     00530002
      OUT.IAQ IS STRING LEN 9 PAD '0' JUSTIFY RIGHT                     00540002
      OUT.MADQ IS STRING LEN 9 PAD '0' JUSTIFY RIGHT                    00550002
      OUT.OWRMRP IS STRING LEN 9 PAD '0' JUSTIFY RIGHT                  00560002
      OUT.ADQ IS STRING LEN 9 PAD '0' JUSTIFY RIGHT                     00570002
      OUT.ADF IS STRING LEN 7 PAD '0' JUSTIFY RIGHT                     00580002
      OUT.PCM IS STRING LEN 3 PAD '0' JUSTIFY RIGHT                     00590002
      OUT.ROP IS STRING LEN 7 PAD '0' JUSTIFY RIGHT                     00600002
      OUT.QFD IS STRING LEN 9 PAD '0' JUSTIFY RIGHT                     00610002
      OUT.QFR IS STRING LEN 9 PAD '0' JUSTIFY RIGHT                     00620002
      OUT.RDN IS STRING LEN 15                                          00630002
      OUT.NSHIP IS STRING LEN 3 PAD '0' JUSTIFY RIGHT                   00640002
      OUT.DIC IS STRING LEN 3                                           00650002
      OUT.PROJ IS STRING LEN 3                                          00660002
      OUT.COND IS STRING LEN 1                                          00670002
```

```
      OUT.SERV IS STRING LEN 1                                                  00680002
      OUT.IPG IS STRING LEN 1 PAD '0' JUSTIFY RIGHT                             00690002
      OUT.PPZONE IS STRING LEN 1                                                00700002
      OUT.DEST IS STRING LEN 2                                                  00710002
      OUT.POE IS STRING LEN 3                                                   00720002
      OUT.MODE IS STRING LEN 1                                                  00730002
      OUT.TRANCOST IS STRING LEN 7 PAD '0' JUSTIFY RIGHT                        00740002
      OUT.SHIPDATE IS STRING LEN 5 PAD '0' JUSTIFY RIGHT                        00750002
      OUT.QTYOFF IS STRING LEN 5 PAD '0' JUSTIFY RIGHT                          00760002
      OUT.MROCUBE IS STRING LEN 5 JUSTIFY RIGHT PAD '0'                         00770002
      OUT.MROWGT IS STRING LEN 6 JUSTIFY RIGHT PAD '0'                          00780002
END IMAGE                                                                       00790002
OPEN DATASET OUTDATAN FOR OUTPUT                                                00800002
PREPARE IMAGE NSNOUT                                                            00810002
                                                                                00820002
FIND2:  IN NSN          FD SHLM IS GT 0                                         00830002
                           DSC = M                                              00840002
                           ICC = 1 OR P                                         00850002
        END FIND                                                                00860002
                                                                                00870002
FR1: FR FIND2                                                                   00880002
        %NSNOUT:OUT.NSN = NSN                                                   00890002
        %NSNOUT:OUT.HAZ = HZSC                                                  00891002
        %NSNOUT:OUT.INAME = ITEMNAME                                            00892002
        %NSNOUT:OUT.LDISP = LDDATE                                              00893002
        %NSNOUT:OUT.SHLM = SHLM                                                 00894002
        %NSNOUT:OUT.SPRQC = SPRQC                                               00895002
        %NSNOUT:OUT.UCUBE =  UCUBE * 1000                                       00896002
        %NSNOUT:OUT.UWEIGHT =UWEIGHT * 100                                      00897002
        %NSNOUT:OUT.UPRICE =UPRICE * 100                                        00898002
        %NSNOUT:OUT.SLM = SLM * 10                                              00899002
        %NSNOUT:OUT.BOQ = BOQ                                                   00899102
        %NSNOUT:OUT.IAQ = IAQ                                                   00899202
        %NSNOUT:OUT.MADQ = MADQ * 10                                            00899302
        %NSNOUT:OUT.OWRMRP = OWRMRP                                             00899402
        %NSNOUT:OUT.ADQ = ADQ                                                   00899502
        %NSNOUT:OUT.ADF = ADF                                                   00899602
        %NSNOUT:OUT.PCM = PCM                                                   00899702
        %NSNOUT:OUT.ROP = ROP                                                   00899802
        %NSNOUT:OUT.QFD = QFD                                                   00899902
        %NSNOUT:OUT.QFR = QFR                                                   00900002
FIND3:  IN DMRO1, DMRO2, DMRO3, DMRO4 FD NSNORPART = %NSNOUT:OUT.NSN            00900102
        END FIND                                                                00900202
FR2:    FR FIND3                                                                00900302
           IF TOTCUBE > 0 THEN                                                  00900402
              %MROCUBE = $ROUND(TOTCUBE)                                        00900502
           ELSE                                                                 00900602
              %MROCUBE = $ROUND(CUBE * QTY OFF)                                 00900702
           END IF                                                               00900802
           IF TOTWGT > 0 THEN                                                   00900902
              %MROWGT = TOTWGT                                                  00901002
           ELSE                                                                 00901102
              %MROWGT = $ROUND(WGTXQTY,0)                                       00901202
           END IF                                                               00901302
           IF %MROWGT = 0 THEN                                                  00901402
              %MROWGT =1                                                        00901502
           END IF                                                               00901602
           %NSNOUT:OUT.RDN = RDN                                                00901702
           %NSNOUT:OUT.NSHIP = NUM SHIPS                                        00901802
           %NSNOUT:OUT.DIC =  DIC                                               00901902
           %NSNOUT:OUT.PROJ = PROJ CODE                                         00902002
           %NSNOUT:OUT.COND = COND CODE                                         00902102
           %NSNOUT:OUT.SERV = SERV IND                                          00902202
           %NSNOUT:OUT.IPG = IPG                                                00902302
           %NSNOUT:OUT.PPZONE = PPZONE                                          00902402
           %NSNOUT:OUT.DEST = DEST CODE                                         00902502
```

```
            %NSNOUT:OUT.POE = POE                                          00902602
            %NSNOUT:OUT.MODE = MODE                                        00902702
            %NSNOUT:OUT.TRANCOST = TRANS COST * 100                        00902802
            %NSNOUT:OUT.SHIPDATE = DATE SHIP                               00902902
            %NSNOUT:OUT.QTYOFF = QTY OFF                                   00903002
            %NSNOUT:OUT.MROCUBE = %MROCUBE                                 00903102
            %NSNOUT:OUT.MROWGT = %MROWGT                                   00903202
            WRITE IMAGE NSNOUT    ON  OUTDATAN                             00903302
        END FOR                                                            00903402
    END FOR                                                                00903502
END                                                                        00903602
CLOSE ALL                                                                  00903702
EOJ                                                                        00903802
/*                                                                         00903902
//STEP2   EXEC PGM=IERRCOOO,REGION=990K,PARM='CORE=MAX'                    00904002
//SORTLIB DD DSN=SYS1.SORTLIB,DISP=SHR                                     00904102
//SYSUDUMP DD  SYSOUT=*                                                    00904202
//SORTMSG  DD  SYSOUT=*                                                    00904302
//SYSOUT   DD  SYSOUT=*                                                    00904402
//SORTIN   DD DSN=GOR.BAKER.P8016MRO,                                      00904502
//         DISP=(SHR)                                                      00904602
//SORTOUT  DD DSN=GOR.BAKER.P8016MS,                                       00904702
//         UNIT=TAPE,DISP=(NEW,CATLG,DELETE),                              00904802
//         LABEL=RETPD=20C                                                 00904902
//SORTWK01  DD UNIT=WORKD,SPACE=(TRK,913)                                  00905002
//SORTWK02  DD UNIT=WORKD,SPACE=(TRK,913)                                  00905102
//SORTWK03  DD UNIT=WORKD,SPACE=(TRK,913)                                  00905202
//SORTWK04  DD UNIT=WORKD,SPACE=(TRK,913)                                  00905302
//SORTWK05  DD UNIT=WORKD,SPACE=(TRK,913)                                  00905402
//SORTWK06  DD UNIT=WORKD,SPACE=(TRK,913)                                  00905502
//SYSIN DD *                                                               00905602
 SORT FIELDS=(1,13,CH,A)                                                   00905702
 END                                                                       00905802
/*                                                                         00905902
//STEP3 EXEC SPSSX,CYLS='2,200'                                            00906002
TITLE 'GOR.BAKER.P8016MRO FREQUENCY REPORT'                                00906102
DATA LIST FILE = INFILE /                                                  00906202
 LDDATE   35-39                                                            00906302
 SHM 40-41                                                                 00906402
 SPROC 42        (A)                                                       00906502
 UCUBE 43-48 (3)                                                           00906602
 UWEIGHT 49-54 (2)                                                         00906702
 UPRICE 55-63 (2)                                                          00906802
 SLM 64-66 (1)                                                             00906902
 BOQ 67-75                                                                 00907002
 IAQ 76-84                                                                 00907102
 MADQ 85-93 (1)                                                            00907202
 OWRMRP 94-102                                                             00907302
 ADQ 103-111                                                               00907402
 ADF 112-118                                                               00907502
 PCM 119-121                                                               00907602
 ROP 122-128                                                               00907702
 QFD 129-137                                                               00907802
 QFR 138-146                                                               00907902
 RDN1 147 (A)                                                              00908002
 NSHIP 162-164                                                             00908102
 DIC 165-167 (A)                                                           00908202
 PROJ 168-170 (A)                                                          00908302
 PROJ1 168 (A)                                                             00908402
 COND 171 (A)                                                              00908502
 IPG 173 (A)                                                               00908602
 PPZONE 174 (A)                                                            00908702
 DEST 175-176 (A)                                                          00908802
 POE 177-179 (A)                                                           00908902
 MODE 180 (A)                                                              00909002
 TRANCOST 181-187 (2)                                                      00909102
```

```
 SHIPYR 188-189                                                                  00909202
 QTYOFF 193-197                                                                  00909302
 MROCUBE 198-202                                                                 00909402
 MROWGT 203-208                                                                  00909502
MISSING VALUES LDDATE SHM UCUBE TO QFR TRANCOST TO MROWGT (0)                    00909602
RECODE RDN1 ('A', 'B', 'C', 'W' = 'A' )                                          00909702
            ('N', 'P', 'Q', 'R', 'V', 'L', 'M', 'Z' = 'N'  )                     00909802
            ('D', 'E', 'F', 'J' = 'F'  )                                         00909902
STRING PWR (A8)                                                                  00910002
DO   IF RDN1 EQ 'A' AND (PROJ = '3AA' OR PROJ = 'WR2')                           00910102
COMPUTE PWR = ' A 97%  '                                                         00910202
ELSE IF RDN1 EQ 'N' AND (PROJ1 = 'P')                                            00910302
COMPUTE PWR = ' N 95%  '                                                         00910402
ELSE IF RDN1 EQ 'N' AND (PROJ = '714' )                                          00910502
COMPUTE PWR = ' N 0%   '                                                         00910602
ELSE IF RDN1 EQ 'F' AND (PROJ = '262' OR PROJ = '596')                           00910702
COMPUTE PWR = ' F 0%   '                                                         00910802
ELSE IF RDN1 EQ 'F' AND (PROJ NE '    ')                                         00910902
COMPUTE PWR = ' F 75%  '                                                         00911002
ELSE                                                                             00911102
COMPUTE PWR = ' NONE   '                                                         00911202
END IF                                                                           00911302
RECODE MPOWGT (0 THRU 69.99=69)                                                  00911402
              (70 THRU 499.99=499)                                               00911502
              (500 THRU 999.99=999)                                              00911602
              (1000 THRU 1999.99=1999)                                           00911702
              (2000 THRU 4999.99=4999)                                           00911802
              (5000 THRU 10000=10000)                                            00911902
              (10000 THRU HI=10001) INTO WGTCAT                                  00912002
STRING REFRIG (A8)                                                               00912102
RECODE SPRQC ('U', '3', '4', '5', '6' = ' REFRIG ' )                             00912202
 ('0', ' ', 'Z' = 'NOREFRIG')                                                    00912302
 (ELSE = ' NO REQ ') INTO REFRIG                                                 00912402
BREAKDOWN QTYOFF BY PWR                                                          00912502
OPTIONS 6                                                                        00912602
CONDESCRIPTIVE  TRANCOST TO MROWGT                                               00912702
FREQUENCIES VARIABLES= RDN1 TO DIC COND TO MODE SHIPYR                           00912802
                                                                                 00912902
FINISH                                                                           00913002
//INFILE DD DSN=GOR.BAKER.P8016MRO,                                              00913102
// DISP=SHR                                                                      00913202
//*                                                                              00913303
//STEP4  EXEC PGM=ATJ91U                                                         01980001
//SYSPRINT DD SYSOUT=*                                                           01990001
//SYSUT1   DD DSN=GOR.BAKER.P8016MS,DISP=SHR                                     02000001
//SYSUT2   DD DSN=GOR.BAKER.P8016AD,DISP=(NEW,CATLG,DELETE),                     02010001
//         UNIT=3380,VOL=SER=WORKWS,SPACE=(TRK,(130,160),RLSE),                  02020001
//         DCB=(LRECL=36,BLKSIZE=24444,RECFM=FB)                                 02030001
//SYSIN    DD *                                                                  02040001
* DEFAULT PWR MRO QTY PROPORTION = 0 IN OUTPUT COLUMNS 14-18                     02050001
* DEFAULT PWR MRO DISPOSAL QTY PROPORTION = 0 IN OUTPUT COLUMNS 19-23            02060001
* DEFAULT TRANS COST PER POUND    = $0.082 IN OUTPUT COLUMNS 24-29               02070001
* DEFAULT HANDLING COST PER POUND = $0.091 IN OUTPUT COLUMNS 30-36               02080001
* DEFAULT MODE G TRANS COST PER POUND = $0.24                                    02090000
* DEFAULT MODE H TRANS COST PER POUND = $1.16                                    02100000
* MAINLINE                                                                      02110001
IF EOJ                                                                           02120001
    GO 2 EOJ ENDIF                                                               02130001
IF SYSUT1 = 1                                                                    02140001
    M 1 TO [illegible] ENDIF                                                     02150001
                                                                                 02160001
[illegible]                                                                      02170001
                                                                                 02180001
    M 1 TO H1 1) ENDIF                                                           02190001
                                                                                 02200001
[illegible]                                                                      02210001
```

```
    ADD 203,6 TO H100,10                                                    02880001
    MULTIPLY 116 BY 203,6 GIVING H140,6                                     02890001
    ADD H140,6 TO H120,10                                                   02900001
ENDIF                                                                       02910001
* H160,10 SHIPCOST 2 DECIMAL PLACES                                         02920001
IF 203,6 GT '000070'                                                        02930001
    ADD 2860 TO H160,10                                                     02940001
ELSE                                                                        02950001
    ADD 496 TO H160,10                                                      02960001
ENDIF                                                                       02970001
EXIT                                                                        02980001
*                                                                           02990001
* D2-WRITE-NSN PROB, AND RATES                                              03000001
D2                                                                          03010001
M H1 TO R1,13                                                               03020001
IF H30,10 GT ZEROS                                                          03030001
    DIVIDE H30,10 INTO H50,15                                               03040001
    ADD 5 TO H50,15                                                         03050001
    M H59 TO R14,5                                                          03060001
    DIVIDE H30,10 INTO H70,13                                               03070001
    ADD 5 TO H70,13                                                         03080001
    M H77 TO R19,5                                                          03090001
ELSE                                                                        03100001
    M ZEROS TO R14,5                                                        03110001
    M ZEROS TO R19,5                                                        03120001
ENDIF                                                                       03130001
IF H100,10 GT ZEROS                                                         03140001
    DIVIDE H100,10 INTO H120,12                                             03150001
    ADD 5 TO H120,12                                                        03160001
    M H125 TO R24,6                                                         03170001
ELSE                                                                        03180001
    M '000082' TO R24,6                                                     03190001
ENDIF                                                                       03200001
IF H200,10 GT ZEROS                                                         03210001
    DIVIDE H200,10 INTO H160,13                                             03220001
    ADD 5 TO H160,13                                                        03230001
    M H165 TO R30,7                                                         03240001
ELSE                                                                        03250001
    M '0000910' TO R30,7                                                    03260001
ENDIF                                                                       03270001
IF R24,6 EQ ZEROS                                                           03280001
    M '000082' TO R24,6                                                     03290001
ENDIF                                                                       03300001
IF R30,7 EQ ZEROS                                                           03310001
    M '0000910' TO R30,7                                                    03320001
ENDIF                                                                       03330001
W2                                                                          03340001
M ZEROS TO H14,500                                                          03350001
EXIT                                                                        03360001
/*                                                                          03370001
//STEP5   EXEC PGM=IERRCO00,REGION=990K,PARM='CORE=MAX'                     03890002
//SORTLIB DD DSN=SYS1.SORTLIB,DISP=SHR                                      03900001
//SYSUDUMP DD  SYSOUT=*                                                     03910001
//SORTMSG  DD  SYSOUT=*                                                     03920001
//SYSOUT   DD  SYSOUT=*                                                     03930001
//SORTIN   DD DSN=GOR.BAKER.P8016NS,                                        03940001
//         DISP=(SHR)                                                       03950001
//SORTOUT  DD DSN=GOR.BAKER.P8016SN,                                        03960001
//         UNIT=WORKD,DISP=(NEW,PASS,DELETE),                               03970001
//         SPACE=(TRK,(13,91),RLSE),VOL=SER=WORKDS                          03980001
//SORTWK01  DD UNIT=WORKD,SPACE=(TRK,913)                                   03990001
//SORTWK02  DD UNIT=WORKD,SPACE=(TRK,913)                                   04000001
//SORTWK03  DD UNIT=WORKD,SPACE=(TRK,913)                                   04010001
//SORTWK04  DD UNIT=WORKD,SPACE=(TRK,913)                                   04020001
//SORTWK05  DD UNIT=WORKD,SPACE=(TRK,913)                                   04030001
//SORTWK06  DD UNIT=WORKD,SPACE=(TRK,913)                                   04040001
```

```
GOBACK                                                                          02220001
*                                                                               02230001
* D1-ACCUMULATE QTY, WGT, AND COSTS                                             02240001
D1                                                                              02250001
* H20,1 SERVICE CODE                                                            02260001
IF 147 EQ 'A' OR 'B' OR 'C' OR 'W'                                              02270001
    M 'A' TO H20,1                                                              02280001
ENDIF                                                                           02290001
IF 147 EQ 'N' OR 'P' OR 'Q' OR 'R' OR 'V' OR 'L' OR 'M' OR 'Z'                  02300001
    M 'N' TO H20,1                                                              02310001
ENDIF                                                                           02320001
IF 147 EQ 'D' OR 'E' OR 'F' OR 'J'                                              02330001
    M 'F' TO H20,1                                                              02340001
ENDIF                                                                           02350001
* H30,10 MRO QTY                                                                02360001
ADD 193,5 TO H30,10                                                             02370001
* H50,10 PWR QTY                                                                02380001
* H70,10 PWR DISPOSAL QTY WITH 2 DECIMAL PLACES                                 02390001
IF H20,1 EQ 'A'                                                                 02400001
    IF 168,3 EQ '3AA' OR 'WR2'                                                  02410001
        ADD 193,5 TO H50,10                                                     02420001
        MULTIPLY 3 BY 193,5 GIVING H90,6                                        02430001
        ADD H90,6 TO H70,10                                                     02440001
ENDIF                                                                           02450001
IF H20,1 EQ 'N'                                                                 02460001
    IF 168,1 EQ 'P'                                                             02470001
        ADD 193,5 TO H50,10                                                     02480001
        MULTIPLY 5 BY 193,5 GIVING H90,6                                        02490001
        ADD H90,6 TO H70,10                                                     02500001
ENDIF                                                                           02510001
IF H20,1 EQ 'N'                                                                 02520001
    IF 168,3 EQ '714'                                                           02530001
        ADD 193,5 TO H50,10                                                     02540001
        ADD 193,5 TO H70,8                                                      02550001
ENDIF                                                                           02560001
IF H20,1 EQ 'F'                                                                 02570001
    IF 168,3 EQ '262' OR '596'                                                  02580001
        ADD 193,5 TO H50,10                                                     02590001
        ADD 193,5 TO H70,8                                                      02600001
ENDIF                                                                           02610001
IF H20,1 EQ 'F'                                                                 02620001
  IF 168,3 NE '262'                                                             02630001
    IF 168,3 NE '596'                                                           02640001
      IF 168,3 NE '   '                                                         02650001
        ADD 193,5 TO H50,10                                                     02660001
        MULTIPLY 25 BY 193,5 GIVING H90,6                                       02670001
        ADD H90,6 TO H70,10                                                     02680001
ENDIF                                                                           02690001
* H100,10 MROWGT                                                                02700001
* H200,10 SHIPWGT                                                               02710001
* H120,10 TRANCOST 2 DECIMAL PLACES                                             02720001
ADD 203,6 TO H200,10                                                            02730001
IF 180,1 EQ 'A' OR 'B' OR 'D' OR 'J' OR 'K' OR 'N' OR 'Q' OR 'S' OR 'T'         02740001
    ADD 203,6 TO H100,10                                                        02750001
    ADD 181,7 TO H120,10                                                        02760001
ENDIF                                                                           02770001
IF 180,1 EQ 'U' OR 'V' OR '5'                                                   02780001
    ADD 203,6 TO H100,10                                                        02790001
    ADD 181,7 TO H120,10                                                        02800001
ENDIF                                                                           02810001
IF 180,1 EQ 'G'                                                                 02820001
    ADD 203,6 TO H100,10                                                        02830001
    MULTIPLY 24 BY 203,6 GIVING H140,6                                          02840001
    ADD H140,6 TO H120,10                                                       02850001
ENDIF                                                                           02860001
IF 180,1 EQ 'H'                                                                 02870001
```

```
//SYSIN DD *                                                                    04050001
 SORT FIELDS=(1,13,CH,A)                                                       04060001
 END                                                                           04070001
/*                                                                             04080001
//STEP6 EXEC PGM=ATJ91U                                                        04090002
//SYSPRINT DD SYSOUT=*                                                         04100001
//SYSUDUMP DD SYSOUT=*                                                         04110001
//SYSUT1   DD DSN=GOR.BAKER.P8016SN,DISP=(SHR,CATLG)                           04120001
//SYSUT1A  DD DSN=GOR.BAKER.P8016AD,DISP=SHR                                   04130001
//SYSUT2   DD DSN=GOR.BAKER.P8016DN,                                           04140001
//  UNIT=3380,DISP=(NEW,CATLG,DELETE),VOL=SER=WORKDS,                          04150001
//  DCB=(LRECL=169,BLKSIZE=23322,RECFM=FB),                                    04160001
//  SPACE=(TRK,(100,100),RLSE)                                                 04170001
//SYSIN    DD *                                                                04180001
NOREAD                                                                        04190001
READ                                                                          04200001
READA                                                                         04210001
                                                                              04220001
* L1 MAINLINE                                                                 04230001
L1                                                                            04240001
IF 55,9 EQ ZEROS                                                              04250001
    M '000011280' TO N55,9                                                    04260001
ENDIF                                                                         04270001
IF 49,6 EQ ZEROS                                                              04280001
    M '001604' TO N49,6                                                       04290001
ENDIF                                                                         04300001
IF 43,6 EQ ZEROS                                                              04310001
    M '001334' TO N43,6                                                       04320001
ENDIF                                                                         04330001
IF N1,13 EQ A1,13                                                             04340001
   MOVE 1  TO R1,146                                                          04350001
   MOVE A14 TO R147,5                                                         04360001
   MOVE A19 TO R152,5                                                         04370001
   MOVE A24 TO R157,6                                                         04380001
   MOVE A30 TO R163,7                                                         04390001
   W2                                                                         04400001
   READ                                                                       04410001
   GO 1                                                                       04420001
ENDIF                                                                         04430001
IF N1,13 LT A1,13                                                             04440001
   MOVE 1  TO R1,146                                                          04450001
   MOVE ZEROS TO R147,5                                                       04460001
   MOVE ZEROS TO R152,5                                                       04470001
   MOVE '000082' TO R157,6                                                    04480001
   MOVE '0000910' TO R163,7                                                   04490001
   W2                                                                         04500001
   READ                                                                       04510001
   GO 1                                                                       04520001
ENDIF                                                                         04530001
IF N1,13 GT A1,13 READA ENDIF                                                 04540001
GO 1                                                                          04550001
/*                                                                            04560001
//STEP7 EXEC PGM=ATJ91U                                                       04880002
//SYSPRINT DD SYSOUT=*                                                        04890001
//SYSUDUMP DD SYSOUT=*                                                        04900001
//SYSUT1   DD DSN=GOR.BAKER.P8016DN,DISP=(SHR)                                04910001
//SYSUT2   DD DSN=GOR.BAKER.P8016ND,                                          04920001
//  SPACE=(TRK,(12,50),RLSE),DISP=(OLD,KEEP),                                 04930003
//  UNIT=3380,VOL=SER=DORO02,DCB=(LRECL=163,RECFM=FB,BLKSIZE=23472)           04940001
//SYSIN    DD *                                                               04950001
M 1 TO 1,156                                                                  04960001
SUBTRACT 152,5 FROM 147,5 GIVING H1,5                                         04970001
M H1 TO 147,5                                                                 04980001
M 157 TO H157,6                                                               04990001
ADD H157,7 TO 163,7 GIVING H10,7                                              05000001
M H10 TO 157,7                                                                05010001
W2                                                                            05020001
/*                                                                            05030001
//                                                                           05040003
```

APPENDIX K

GOR.BAKER.JCL(P8016B) Code

```
//GOR6001C JOB (6001,GOR),'BAKER',MSGCLASS=V,CLASS=6,NOTIFY=GOR6001      00010022
//STEP1 EXEC PGM=SELCOP,PARM=S                                           00010120
//SYSUDUMP DD SYSOUT=*                                                   00010220
//SYSOUT  DD SYSOUT=*                                                    00010320
//SYSUT1  DD DSN=SAN.DATA.LJAC7801,DISP=SHR,                             00010420
// DCB=(LRECL=144,BLKSIZE=23328,RECFM=FB,DEN=3),                         00010520
// LABEL=(1,SL,,EXPDT=98000),UNIT=TAPE,                                  00010620
// VOL=SER=(016278,015936,027885,016871,016699,016378,016444,016367,     00010720
// 016399,016340,016356,002203)                                          00010820
//SYSUT2  DD DSN=GOR.BAKER.P8016B0,                                      00010920
// DISP=(NEW,CATLG,DELETE),UNIT=TAPE,LABEL=RETPD=99,VOL=(,,,12)          00011020
//SYSIN  DD *                                                            00011120
RANGE 0000001 9999999                                                    00011220
/*                                                                       00011320
//STEP2 EXEC PGM=ATJ91U,REGION=990K                                      00011421
//SYSPRINT DD SYSOUT=*                                                   00011520
//SYSUDUMP DD SYSOUT=*                                                   00011620
//SYSOUT  DD SYSOUT=*                                                    00011720
//SYSUT1  DD DSN=GOR.BAKER.P8016B0,DISP=SHR,                             00011820
// DCB=(LRECL=144,BLKSIZE=23328,RECFM=FB,DEN=3),                         00011920
// LABEL=(1,SL,,EXPDT=98000),UNIT=TAPE                                   00012022
//SYSUT2  DD DSN=GOR.BAKER.P8016B,DISP=(NEW,CATLG,DELETE),               00012120
// DCB=(LRECL=120,BLKSIZE=23400,RECFM=FB,DEN=4),                         00012220
// LABEL=RETPD=180,UNIT=TAPE,                                            00012320
// VOL=(,,,12)                                                           00012420
//$ORTPARM DD *                                                          00012520
MSG=AP                                                                   00012620
//SORTWK01  DD UNIT=WORKD,SPACE=(TRK,912)                                00012720
//SORTWK02  DD UNIT=WORKD,SPACE=(TRK,912)                                00012820
//SORTWK03  DD UNIT=WORKD,SPACE=(TRK,912)                                00012920
//SORTWK04  DD UNIT=WORKD,SPACE=(TRK,912)                                00013020
//SORTWK05  DD UNIT=WORKD,SPACE=(TRK,912)                                00013120
//SORTWK06  DD UNIT=WORKD,SPACE=(TRK,912)                                00013220
//SYSIN DD *                                                             00013320
SORT FIELDS=(7,13,CH,A)                                                  00013420
RECORD LRECL=120                                                         00013520
PHASE INPUT                                                              00013620
IF 31,13 NUMERIC                                                         00013720
    M 25 TO 1,120                                                        00013820
    RELEASE                                                              00013920
ENDIF                                                                    00014020
PHASE OUTPUT                                                             00014120
MOVE 1 TO 1,120                                                          00014220
W2                                                                       00014320
/*                                                                       00014420
//STEP3 EXEC PGM=ATJ91U,REGION=990K                                      00017521
//SYSPRINT DD SYSOUT=*                                                   00017620
//SYSUDUMP DD SYSOUT=*                                                   00017720
//SYSOUT  DD SYSOUT=*                                                    00017820
//SYSUT1  DD DSN=GOR.BAKER.P8016B,DISP=SHR                               00017920
//SYSUT2  DD DSN=GOR.BAKER.P8016BS,DISP=(NEW,CATLG,DELETE),              00018020
// DCB=(LRECL=19,BLKSIZE=23465,RECFM=FB),                                00018120
// LABEL=RETPD=180,UNIT=TAPE,                                            00018320
// VOL=(,,,10)                                                           00018420
//$ORTPARM DD *                                                          00018520
MSG=AP                                                                   00018620
//SORTWK01  DD UNIT=WORKD,SPACE=(TRK,912)                                00018720
//SORTWK02  DD UNIT=WORKD,SPACE=(TRK,912)                                00018820
//SORTWK03  DD UNIT=WORKD,SPACE=(TRK,912)                                00018920
//SORTWK04  DD UNIT=WORKD,SPACE=(TRK,912)                                00019020
//SORTWK05  DD UNIT=WORKD,SPACE=(TRK,912)                                00019120
//SORTWK06  DD UNIT=WORKD,SPACE=(TRK,912)                                00019220
//SYSIN DD *                                                             00019320
SORT FIELDS=(1,13,CH,A)                                                  00019420
RECORD LRECL=19                                                          00019520
PHASE INPUT                                                              00019620
```

```
M 'G' TO 19,1                                                                00019720
IF 47,7 EQ 'QTY ADJ'                                                         00019820
    IF 39,2 EQ 'LL'                                                          00019920
        M 'L' TO 19,1                                                        00020020
ENDIF                                                                        00020120
IF 68,5 LT '99999'                                                           00020220
    IF 36,3 EQ 'XR1' OR 'XR3'                                                00020320
        M 1 TO 1,13                                                          00020420
        M 68 TO 14,5                                                         00020520
        RELEASE                                                              00020620
ENDIF                                                                        00020720
IF 68,5 LT '99999'                                                           00020820
    IF 36,3 EQ 'XA1'                                                         00020920
      IF 47,7 EQ 'QTY ADJ'                                                   00021020
        M 1 TO 1,13                                                          00021120
        M 68 TO 14,5                                                         00021220
        RELEASE                                                              00021320
ENDIF                                                                        00021420
PHASE OUTPUT                                                                 00021520
MOVE 1 TO 1,19                                                               00021620
W2                                                                           00021720
/*                                                                           00021820
//STEP4  EXEC PGM=ATJ91U                                                     00021921
//SYSPRINT DD SYSOUT=*                                                       00022020
//SYSUT1   DD DSN=GOR.BAKER.P8016BS,DISP=SHR                                 00022120
//SYSUT2   DD DSN=GOR.BAKER.P8016BA,DISP=(NEW,CATLG,DELETE),                 00022220
//*        UNIT=3380,VOL=SER=WORKWS,SPACE=(TRK,(30,100),RLSE),               00022320
//         UNIT=TAPE,LABEL=RETPD=180,VOL=(,,,9),                             00022422
//         DCB=(LRECL=23,BLKSIZE=23460,RECFM=FB)                             00022520
//SYSIN    DD *                                                              00022620
* MAINLINE                                                                   00022720
IF EOJ                                                                       00022820
    DO 2 EOJ ENDIF                                                           00022920
                                                                             00023020
IF SYSUT1 = 1                                                                00023120
    M 1 TO H1,13 ENDIF                                                       00023220
                                                                             00023320
IF 1,13 NE H1,13                                                             00023420
    DO 2                                                                     00023520
    M 1 TO H1,13 ENDIF                                                       00023620
                                                                             000[illegible]
DO 1                                                                         000[illegible]
GOBACK                                                                       00[illegible]
*                                                                            00024020
* D1-ACCUMULATE DISPOSAL QTY BY NSN                                          00024120
*                                                                            00024220
D1                                                                           00024320
*                                                                            00024420
IF 14,5 NUMERIC                                                              00024[illegible]
    M 14 TO H14,5                                                            00024[illegible]
 ELSE                                                                        000247[illegible]
    M ZEROS  TO H14,5                                                        00024[illegible]
 ENDIF                                                                       000249[illegible]
IF 19,1 EQ 'L'                                                               00025[illegible]
    SUBTRACT H14,5 FROM H100,10                                              00025120
 ELSE                                                                        000252[illegible]
    ADD H14,5 TO H100,10                                                     000[illegible]
 ENDIF                                                                       00025[illegible]
EXIT                                                                         000255[illegible]
*                                                                            00025[illegible]
* D2-WRITE-NSN AND DISPOSAL QTY                                              00025720
*                                                                            00025820
D2                                                                           00025920
                                                                             00026020
IF H100,10 LT ZEROS                                                          00026120
    M ZEROS TO H100,10                                                       00026220
```

```
ENDIF                                                                    00026320
M H1 TO R1,13                                                            00026420
M H100 TO R14,10                                                         00026520
W2                                                                       00026620
M ZEROS TO H100,10                                                       00026720
EXIT                                                                     00026820
/*                                                                       00026920
//STEP5 EXEC PGM=ATJ91U                                                  00027021
//SYSPRINT DD SYSOUT=*                                                   00027120
//SYSUDUMP DD SYSOUT=*                                                   00027220
//SYSUT1   DD DSN=GOR.BAKER.P8016ND,DISP=SHR                             00027320
//SYSUT1A  DD DSN=GOR.BAKER.P8016BA,DISP=SHR                             00027420
//SYSUT2   DD DSN=GOR.BAKER.P8016NB,                                     00027520
//  UNIT=3380,DISP=(NEW,CATLG,DELETE),VOL=SER=WORKWS,                    00027620
//  DCB=(LRECL=173,BLKSIZE=23355,RECFM=FB),                              00027720
//  SPACE=(TRK,(27,100),RLSE)                                            00027820
//SYSIN    DD *                                                          00027920
NOREAD                                                                   00028020
READ                                                                     00028120
READA                                                                    00028220
                                                                         00028320
* L1 MAINLINE                                                           00028420
L1                                                                       00028520
IF EOJ                                                                   00028620
    P 'NUMBER OF NSNS WITHOUT DISPOSALS ='                               00028720
    P H100,10                                                            00028820
EOJ                                                                      00028920
IF N1,13 EQ A1,13                                                        00029020
   MOVE 1  TO R1,10                                                      00029120
   MOVE A14 TO R164,10                                                   00029220
   W2                                                                    00029320
   READ                                                                  00029420
   GO 1                                                                  00029520
ENDIF                                                                    00029620
IF N1,13 LT A1,13                                                        00029720
   MOVE 1  TO R1,10                                                      00029820
   MOVE ZEROS TO R164,10                                                 00029920
   W2                                                                    00030020
   READ                                                                  00030120
   ADD 1 TO H100,1                                                       00030220
   GO 1                                                                  00030320
ENDIF                                                                    00030420
IF N1,13 GT A1,13 READA ENDIF                                            00030520
GO 1                                                                     00030620
/*                                                                       00030720
//STEP6  EXEC  FORTVCLG,REGION=2000K                                     00030821
//FORT.SYSIN DD *                                                        00030920
      INTEGER N, IQFD, IADQ                                              00031020
      DOUBLE PRECISION ADQ, QFD, DISPQ, DISPR, PDISP, UPRICE, MADQ       00031120
      REAL NPWR, UCUBE, UWT, SLM, RPWR, TRANH                            00031220
      CHARACTER*42 A1                                                    00031320
      CHARACTER*18 A2                                                    00031420
      CHARACTER*9 A3                                                     00031520
      CHARACTER*17 A4                                                    00031620
      CHARACTER*9 A5                                                     00031720
C LOOP THRU NSNS                                                         00031820
      DO 900 N=1,99999                                                   00031920
          READ(10,10,END=920)A1,UCUBE,UWT,UPRICE,SLM,A2,MADQ,A3,         00032020
     +    ADQ,A4,QFD,A5,RPWR,NPWR,TRANH,DISPQ                            00032120
   10     FORMAT(A42,F6.3,F6.2,F9.2,F3.1,A18,F9.1,A9,F9.0,A17,F9.0,A9,   00032220
     +    F5.4,F5.4,F7.4,F10.0)                                          00032320
          IF(ADQ.EQ.0.0)THEN                                             00032420
              ADQ=QFD*4.0                                                00032520
          END IF                                                         00032620
          IF(ADQ.GT.0.0)THEN                                             00032720
              DISPR=2.0*DISPQ/ADQ                                        00032820
```

```
          END IF                                                                00032920
          IF(ADQ.EQ.0.0.AND.DISPQ.GT.0.0)THEN                                   00033020
              DISPR=1.0                                                         00033120
          END IF                                                                00033220
          IF(ADQ.EQ.0.0.AND.DISPQ.LT.1.0)THEN                                   00033320
              DISPR=0.0                                                         00033420
          END IF                                                                00033520
          IF(DISPR.GT.1.0)THEN                                                  00033620
              DISPR=1.0                                                         00033720
          END IF                                                                00033820
          IF(DISPR.LT.0.0)THEN                                                  00033920
              DISPR=0.0                                                         00034020
          END IF                                                                00034120
          IF(DISPR.GT.NPWR)THEN                                                 00034220
              PDISP=DISPR-NPWR                                                  00034320
          ELSE                                                                  00034420
              PDISP=0.0                                                         00034520
          END IF                                                                00034620
          IF(PDISP.GT.1.0)THEN                                                  00034720
              PDISP=1.0                                                         00034820
          END IF                                                                00034920
          IF(PDISP.LT.0.0)THEN                                                  00035020
              PDISP=0.0                                                         00035120
          END IF                                                                00035220
          IQFD=INT(QFD)                                                         00035320
          IADQ=INT(ADQ)                                                         00035420
          WRITE(8,30)                                                           00035520
     +    A1,UCUBE,UWT,UPRICE,SLM,A2,MADQ,A3,                                  00035620
     +    IADQ,A4,IQFD,A5,RPWR,NPWR,TRANH,PDISP                                00035720
   30     FORMAT(A42,F7.3,F7.2,F10.2,F4.1,A18,F10.1,A9,I9,A17,I9,A9,           00035820
     +    F6.4,F6.4,F8.4,F8.6)                                                 00035920
  900 CONTINUE                                                                  00036020
  920 STOP                                                                      00036120
      END                                                                       00036220
/*                                                                              00036320
//GO.FT10F001 DD DSN=GOR.BAKER.P8016NB,DISP=SHR                                00036420
//GO.FT08F001 DD DSN=GOR.BAKER.P8016PD,DISP=(NEW,CATLG,DELETE),                00036520
//  UNIT=3380,SPACE=(TRK,(20,29),RLSE),VOL=SER=WORKWS,                          00036622
//  DCB=(RECFM=FB,LRECL=179,BLKSIZE=23449)                                      00036720
//*                                                                             00036820
//STEP7  EXEC SPSSX,CYLS='10,180'                                               00036921
TITLE 'GOR.BAKER.P8016PD FREQUENCY REPORT'                                      00037020
DATA LIST FILE = INFILE /                                                       00037120
 LDISP 35-39                                                                    00037220
 SHM 40-41                                                                      00037320
 SLM 67-70                                                                      00037420
 BOQ 71-79                                                                      00037520
 IAQ 80-88                                                                      00037620
 MADQ 89-98                                                                     00037720
 OWRMRP 99-107                                                                  00037820
 ADQ 108-116                                                                    00037920
 ADF 117-123                                                                    00038020
 PCM 124-126                                                                    00038120
 ROP 127-133                                                                    00038220
 QFD 134-142                                                                    00038320
 QFR 143-151                                                                    00038420
 RPWR 152-157                                                                   00038520
 NPWR 158-163                                                                   00038620
 TRANH 164-171                                                                  00038720
 PDISP 172-179                                                                  00038820
SUBTITLE 'PEACETIME DISPOSAL PROB STEPWISE REGRESSION'                          00038920
REGRESSION VARIABLES= LDISP TO PDISP                                            00039020
  /CRITERIA=PIN(.01) POUT(.25) TOLERANCE(.01)                                   00039120
  /DEP=PDISP /STEPWISE                                                          00039220
  /PARTIALPLOT                                                                  00039320
FINISH                                                                          00039420
```

```
//INFILE DD DSN=GOR.BAKER.P8016PD,                                    00039520
// DISP=SHR                                                           00039620
//*                                                                   00039721
//STEP8 EXEC PGM=ATJ91U                                              00039821
//SYSPRINT DD SYSOUT=*                                               00039917
//SYSUDUMP DD SYSOUT=*                                               00040017
//SYSUT1   DD DSN=GOR.BAKER.P8016PD,DISP=(SHR)                       00040117
//SYSUT2   DD DSN=GOR.BAKER.P8016DB,                                 00040217
//  SPACE=(TRK,(6,10),RLSE),DISP=(OLD,KEEP),                         00040322
//  UNIT=3380,VOL=SER=DOR002,DCB=(LRECL=77,BLKSIZE=23408,RECFM=FB)   00040417
//SYSIN    DD *                                                      00040517
M   1 TO 1,13                                                       00040617
M  14 TO 14,2                                                       00040717
M  16 TO 16,19                                                      00040817
M  40 TO 35,2                                                       00040917
M  50 TO 37,7                                                       00041017
M  67 TO 44,4                                                       00041117
M 117 TO 48,7                                                       00041217
M 124 TO 55,3                                                       00041317
M 152 TO 58,20                                                      00041417
W2                                                                  00041519
/*                                                                  00041618
//                                                                  00041718
```

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Mr. Richard E. Baker
Mr. Rick L. Jernigan

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Cameron Station
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13. ABSTRACT *(Maximum 200 words)*

The Medical Acquisition Shelf-Life (MASS) Model is a decision aid to assist procurement analysts in evaluating alternative bids for stocked medical shelf-life items. MASS attempts to identify the best value bid by balancing longer shelf-life against higher purchase price in order to identify the bid with the lowest life cycle costs. The objectives of the systems documentation are to briefly review the model features, document the MASS programs, describe the MASS files, and explain the procedures for updating the MASS data. The objectives of the user's guide are to describe the model's features, instruct the user in using MASS, and explain the rationale of the model to vendors.

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